WHAT IS CLAIMED IS:

1. A method for assessment of the intra-amniotic environment, comprising (A) obtaining a vaginal sample from a subject, and (B) subjecting the sample to analysis, to determine presence or absence in the sample of a plurality of biomarkers that is indicative of status of the intra-amniotic environment, such that results from the assessment of the vaginal sample informs a diagnostic or prognostic determination in relation to the subject.

2. The method as claimed in claim 1, wherein (A) and (B) are repeated at least at a second time.

3. The method as claimed in claim 1, wherein the biomarkers are indicative of rupture of the fetal membrane.

4. The method as claimed in claim 1, wherein the biomarkers are indicative of intra-amniotic infection.

5. The method as claimed in claim 1, wherein the biomarkers are indicative of intra-amniotic inflammation.

6. The method as claimed in claim 1, wherein the biomarkers are indicative of fetal lung maturation.

7. The method as claimed in claim 1, wherein the biomarkers are selected from the group consisting of alpha-fetoprotein, fetal fibronectin, insulin-like growth factor binding protein-1, prolactin and human placental lactogen, and fragments thereof.

8. The method as claimed in claim 1, wherein the biomarkers are selected from the group consisting of beta-2-microglobulin and cystatin-C,

and fragments thereof.

9. The method as claimed in claim 1, wherein the plurality of biomarkers is subjected to pattern recognition analysis.

10. The method as claimed in claim 1, wherein the method is an ELISA.

11. The method as claimed in claim 1, wherein the method comprises mass spectrometric analysis effected via SELDI.

12. The method as claimed in claim 11, wherein the method comprises applying the vaginal sample to a biochip comprising at least one absorbent selected from the group consisting of a hydrophobic adsorbent and a cation exchange absorbent.

13. The method as claimed in claim 11, the mass spectrometric analysis comprises subjecting mass-spectrometry peak data obtained for the vaginal sample to software analysis comprised of an algorithm for analyzing data extracted from a spectrum.

14. The method as claimed in claim 13, wherein the algorithm implements a pattern-recognition analysis that is keyed to data relating to at least one of the biomarkers.

15. The method as claimed in claim 1, wherein a first vaginal sample is collected early during a pregnancy and contributes to a baseline against which subsequent vaginal samples are compared.

16. The method as claimed in claim 15, wherein the determination includes a recommendation for treatment.

17. The method as claimed in claim 16, further comprising

monitoring the treatment by assaying at least one vaginal sample during treatment, to determine the presence or absence in the vaginal sample of biomarkers that are indicative of status of the intra-amniotic environment.

18. The method as claimed in claim 16, wherein the determination includes a recommendation of treatment that comprises antibiotic treatment, tocolytic treatment, anti-inflammatory treatment, or antioxidant treatment.

19. The method as claimed in claim 16, wherein the determination includes a recommendation of treatment that comprises inducing labor.

20. The method as claimed in claim 16, wherein the determination includes a recommendation of treatment that comprises a cesarean section.

21. A method for assessment of the intra-amniotic environment, comprising (A) obtaining a vaginal sample from a subject, (B) subjecting the sample to analysis, to determine the presence or absence in the sample of one or more oxidized or carbonylated peptides that are indicative of status of the intra-amniotic environment, such that results from the assessment of the vaginal sample informs a diagnostic or prognostic determination in relation to the subject.

22. The method as claimed in claim 21, wherein the vaginal sample is treated with dinitrophenol which is incorporated into the oxidized or carbonylated peptide.

23. The method as claimed in claim 21, wherein the method is an ELISA.

24. The method as claimed in claim 21, wherein the method comprises mass spectrometric analysis effected via SELDI.

25. The method as claimed in claim 21, wherein the method comprises applying the vaginal sample to a biochip comprising at least one absorbent selected from the group consisting of a hydrophobic adsorbent and a cation exchange absorbent.

26. The method as claimed in claim 24, wherein the mass spectrometric analysis comprises subjecting mass-spectrometry peak data obtained for the vaginal sample to software analysis comprised of an algorithm for analyzing data extracted from a spectrum.

27. The method as claimed in claim 26, wherein the algorithm implements a pattern-recognition analysis that is keyed to data relating to a plurality of oxidized or carbonylated peptides.

28. The method as claimed in claim 21, wherein a plurality of oxidized or carbonylated peptides is subjected to pattern recognition analysis.

29. The method as claimed in claim 21, wherein a first vaginal sample is collected early during a pregnancy and contributes to a baseline against which subsequent vaginal samples are compared.

30. The method as claimed in claim 21, wherein the determination includes a recommendation for treatment.

31. The method as claimed in claim 30, further comprising monitoring the treatment by assaying at least one vaginal sample during treatment, to determine the presence or absence in the vaginal sample of the one or more oxidized or carbonylated peptides.

32. The method as claimed in claim 30, wherein the determination includes a recommendation of treatment that comprises antibiotic treatment, tocolytic treatment, anti-inflammatory treatment, or antioxidant treatment.

33. The method as claimed in claim 30, wherein the determination includes a recommendation of treatment that comprises inducing labor.

34. The method as claimed in claim 30, wherein the determination includes a recommendation of treatment that comprises a cesarean section.

35. The method as claimed in claim 22, wherein the treated vaginal sample is applied to a biochip comprising an anti-dinitrophenol antibody and subjected to mass spectrometric analysis that is keyed to a shift in molecular weight, relative to a sample not treated with dinitrophenol, that corresponds to the incorporated dinitrophenol group.

36. The method as claimed in claim 22, wherein the treated vaginal sample is applied to a biochip comprising an anti-dinitrophenol antibody and subjected to mass spectrometric analysis is keyed to a shift or approximately 16 Da, relative to a sample not treated with dinitrophenol, that corresponds to the molecular mass of oxygen.

37. The method as claimed in claim 21, wherein total carbonyl content of the oxidized or carbonylated peptides is measured by derivatizing the peptides with dintrophenylhydrazine.

38. A method for qualifying status of the intra-amniotic environment in a subject over time, comprising (i) providing spectra generated by mass spectrometric analysis of at least two vaginal samples

taken from the subject, and (ii) extracting data from the spectra and subjecting the data to pattern-recognition analysis that is keyed to at least two peaks in the spectra.

39. A kit for detecting, from a sample of vaginal fluid, the presence of at least two biomarkers indicative of status of the intra-amniotic environment, comprising (a) a substrate adapted for inserting into a mass spectrophotometer for analysis, and (b) instructions for applying a sample of vaginal fluid to the substrate and subjecting the substrate to mass spectrometric analysis.

40. The kit as claimed in claim 39, wherein the substrate is a biochip.

41. The kit as claimed in claim 40, wherein the biochip comprises at least one absorbent selected from a hydrophobic adsorbent and a cation exchange adsorbent.

42. The kit as claimed in claim 40, wherein the biochip comprises an anti-dinitrophenol absorbent.

43. The kit as claimed in claim 39, additionally comprising, in a separate container, a quantity of the biomarker in pure form to be used as a standard.

44. The kit as claimed in claim 43, a washing solution for removing unbound material from the substrate.

45. A kit for detecting, from a sample of vaginal fluid, the presence of at least one oxidized or carbonylated peptide indicative of status of the intra-amniotic environment, comprising (a) a substrate that binds the peptide, and (b) instructions for applying a sample of vaginal

fluid to the substrate and subjecting the substrate to analysis.

46. A kit as claimed in claim 45, comprising an ELISA substrate.

47. The kit as claimed in claim 45, comprising a substrate adapted for insertion into a mass spectrophotometer for analysis.

48. The kit as claimed in claim 45, additionally comprising, in separate container, a quantity of the oxidized or carbonylated peptide in pure form to be used as a standard.

49. The kit as claimed in claim 48, a washing solution for removing unbound material from the substrate.

50. A method for identifying biomarkers that are present in vaginal fluid and are indicative of status of the intra-amniotic environment, comprising:

(a) profiling a sample of vaginal fluid by mass spectrophotometric analysis,

(b) profiling a sample of amniotic fluid by mass spectrophotometric analysis, and

(c) comparing the profiles obtained in (a) and (b) to identify biomarkers in vaginal fluid that also are found in amniotic fluid.

51. The method as claimed in claim 50, additionally comprising correlating the presence or absence of the biomarkers in the vaginal fluid that are also found in the amniotic fluid to a clinical status.

52. The method as claimed in claim 51, wherein the clinical status is rupture of the fetal membrane.

53. The method as claimed in claim 51, wherein the clinical status is intra-amniotic infection.

54. The method as claimed in claim 51, wherein the clinical status is intra-amniotic inflammation.

55. A method for identifying biomarkers that are present in vaginal fluid and are indicative of status of the intra-amniotic environment, comprising:

(a) profiling a first sample of vaginal fluid from a subject having a normal pregnancy by mass spectrophotometric analysis,

(b) profiling a second sample of vaginal fluid from a subject having a pregnancy characterized by an abnormal clinical status by mass spectrophotometric analysis, and

(c) correlating the presence or absence of the biomarkers in the vaginal fluid to clinical status of the pregnancy.